REMARKS

In section 4 of the Office Action, the Examiner
rejected claims 1, 11, 16, 17, 28, 29, 32, 37, 42, 46,
47, 56, and 57 under 35 U.S.C. §102(e) as being
anticipated by the Schumann patent.

The Schumann patent shows in FIG. 1 an on-
screen display graphics subsystem 102 and a video display
controller 108. The on-screen display graphics subsystem
102 creates pixel-based graphics, where each pixel is
represented by a pattern of bits that define the color of
the pixel. An MPEG-2 decoder 104 converts compressed
MPEG-2 data into images, and a converter 106 converts the
television ready data into an equivalent bit
representation. The controller 108 creates the proper
video signals, timing of image display, and overlay of
bit mapped data over the MPEG-2 images, and sends the
output signal to the display 110.

The Schumann patent also discloses that a
graphics element can be added to a background image
either by image replacement or image overlay. As shown
in Figure 9 of the Schumann patent, image replacement
consists of editing an existing MPEG-2 image (I-frame)
and replacing a portion of the data in the I-frame with
the data representing a graphic. Each graphic represents
a region or macroblock boundary. Before the graphic can

be inserted into the image, the graphic is modified, and

the final position of the graphic placed in the

macroblock headers. After modifying the graphic's

position, the I-frame data portion, starting at the

position desired, is replaced by the updated graphic

data.

Thus, an MPEG-2 base image (I-frame) initially

is displayed, and the appropriate MPEG-2 graphic is

selected based on a user input. The MPEG-2 graphic is

modified for insertion at the appropriate character

position. Then, a portion of the background data in the

base image is replaced with the graphic, and the modified

image is passed to the decoder for display.

Whereas image replacement modifies the base

image, image overlay as shown in Figure 10 of the

Schumann patent creates a new image, and that new image

is overlaid on the original using the P-frame

construction and display mechanism. In image overlay,

the base image initially is displayed in the form of an

I-frame, a graphic is selected in response to user

inputs, the graphic is modified to incorporate image

position, and the graphic is then inserted into the P-

frame under construction. However, areas of the overlay

image that do not contain any graphic must also be coded.

These areas are transparent to enable the underlying

image to be viewed. Hence, portions of the overlay that
cover an underlying image that is to be viewed are coded
using a transparency graphic, containing MPEG-2 code
instructing the decoder to ignore the data. The overlay
image then is sent to the MPEG-2 decoder for display.

Figure 7 of the Schumann patent depicts the
general flow of this graphics processing. The display
screen initially displays a background image, created by
displaying an I-frame. Overlaid on the base image is a
P-frame representing a first image. The picture remains
still until the user enters a selection. A graphics
change thus is selected and an additional, corresponding,
P-frame is created. This process is repeated for each
new user selection.

Independent claim 1 of the present application
is directed to an MPEG on-screen display coder comprising
an on-screen display turn on device and an MPEG encoder.
The on-screen display turn on device provides an output
when an on-screen display is to be turned on. The MPEG
encoder receives dynamic video frames and processes the
dynamic video frames so as to encode frames with the on-
screen display in response to the output of the on-screen
display turn on device.

The Schumann patent does not disclose that
dynamic video frames are processed by an MPEG encoder so

as to encode frames with the on-screen display. On the contrary, the Schumann patent discloses at column 5, lines 40-42 that a background image is processed either by image replacement or image overlay, and the Schumann patent further discloses at column 5, lines 5-7 that the background image is a static background image.

Therefore, according to the teachings of the Schumann patent, dynamic video frames are not processed so as to provide frames with the on-screen display. Consequently, the Schumann patent does not anticipate independent claim 1.

Independent claim 32 is directed to an MPEG on-screen display coder comprising an MPEG encoder and a multiplexer. The MPEG encoder encodes frames of a selected program with an on-screen display. The multiplexer replaces original frames with the encoded frames for supply to a digital television receiver.

The Schumann patent does not disclose a multiplexer that replaces original frames with encoded frames for supply to a digital television receiver.

The Examiner points to column 5, lines 30-45 of the Schumann patent for a disclosure of this multiplexer. However, this portion of the Schumann patent merely discloses the encoded frame is continually updated based on program data and control inputs until a new base image

(I-frame) is required, that new encoded frames are dynamically constructed and displayed, that the audio/video output 406 of the DVD player represents DVD/MPEG-2 decoded video and graphics to be displayed on the television screen or computer monitor, that a graphics element can be added to a background image either by image replacement or image overlay, and that image replacement consists of editing an existing MPEG-2 image (I-frame) and replacing a portion of the data with the data representing a graphic.

Accordingly, while the audio/video output 406 of the DVD player represents DVD/MPEG-2 decoded video and graphics to be displayed on the television screen or computer monitor, there is no disclosure that original frames are replaced with the encoded frames. Moreover, while a graphics element can be added to a background image either by image replacement or image overlay, and while image replacement consists of editing an existing MPEG-2 image (I-frame) and replacing a portion of the data with the data representing a graphic, again there is no disclosure that original frames are replaced with the encoded frames. The Schumann patent merely discloses that a portion of an edited frame is replaced or overlaid with a graphic.

Therefore, because the Schumann patent does not disclose a multiplexer that replaces original frames with the encoded frames for supply to a digital television receiver, the Schumann patent does not anticipate independent claim 32.

In section 5 of the Office Action, the Examiner rejected claims 59-62, 64, 70, 74, 75, and 81-83 under 35 U.S.C. §103 as being obvious over the Schumann patent in view of the Naimpally patent.

The Naimpally patent discloses the replacement of stuffing packets with private data packets in order to transmit private data in the transport stream. In this arrangement, a Transport Packet is captured from the Transport Stream. If the Transport Packet includes stuffing bytes, the location and number of the stuffing bytes are determined. Based on these determinations, the stuffing bytes are replaced with private data.

Independent claim 62 is directed to an MPEG on-screen display coder comprising a buffer, an MPEG encoder, and a multiplexer. The buffer receives and buffers an MPEG transport data stream containing frames of a selected program and frames of a non-selected program. The MPEG encoder encodes frames of the selected program with an on-screen display. The multiplexer selectively passes to a digital television receiver the

frames of the non-selected program, the encoded frames of the selected program, and original frames of the selected program.

The Examiner asserts that the Schumann patent discloses a buffer pointing to column 2, lines 1-15 and column 4, lines 1-14.

Column 2, lines 1-15 of the Schumann patent discloses that, as shown in Figure 1, an on-screen display graphics subsystem 102 creates pixel-based graphics, that an MPEG-2 decoder 104 converts compressed MPEG-2 data into images appropriate for viewing on a display, that a converter 106 converts the television ready data into an equivalent bit representation, and that a controller 108 creates the proper video signals, timing of image display, and overlay of bit mapped data over the MPEG-2 images, and sends the output signal to the display 110.

As can be seen, there is no mention of a buffer in this portion of the Schumann patent.

Column 4, lines 1-14 of the Schumann patent discloses that, as shown in Figure 3, an exemplary screen has a static background frame for displaying the words "DISCMENU," together with an ornamental line and the logo DIVX. Overlaid on the image is a series of frames depicting four buttons with corresponding descriptive

labels. The user can select a button corresponding to a function to be executed. When a button is selected, the selected button is highlighted to show that it has been selected, and a DVD player is controlled accordingly.

As can be seen, there is also no mention of a buffer in this portion of the Schumann patent.

Because a premise of the Examiner's rejection is incorrect, the rejection is incorrect.

Moreover, the Naimpally patent discloses buffers in Figure 9. As shown in Figure 9, a Transport Stream is captured in a buffer 910 and is monitored by an analyzer 912. The analyzer 912 captures a Transport Packet, determines whether the Transport Packet includes stuffing bytes, and determines the location and number of the stuffing bytes. The analyzer 912 instructs remultiplexer 914 to replace the stuffing bytes with the private data. The Transport Stream is also provided by the buffer 910 to a buffer 916. The buffers 910 and 916 are generally used to compensate for the processing delays of the analyzer 912 and the remultiplexer 914. A controller 918 controls the data flow through the buffers and ultimately decides whether the Transport Packet will pass through multiplexer 920 or whether the processed output of remultiplexer 916 will pass.

However, neither the Naimpally patent nor the Schumann patent suggests that they can be combined so as to meet the limitations of independent claim 62.

The Naimpally patent relates to replacing stuffing bytes with private data. To this end, the transport stream is analyzed and, when a packet containing a stuffing byte is detected, the stuffing byte is replaced with private data.

The Schumann patent, on the other hand, discloses an arrangement of constructing on-screen display menus and buttons for a DVD user interface. Graphical elements are stored in an I-frame list and in a P-frame list. The graphical elements in the I-frame list are used in image replacement during which an existing I-frame is edited and a portion of the data in the I-frame is replaced with a selected one of the graphical elements in the I-frame list. The graphical elements in the P-frame list are used in image overlay during which a new image is created and is overlaid with a graphical element from the P-list.

It is not clear how any of the buffering, analyzing, and remultiplexing steps disclosed in the Naimpally patent would benefit the arrangement disclosed in the Schumann patent.

Moreover, independent claim 62 recites that a buffer buffers frames of a selected program and a non-selected program, that an MPEG encoder encodes the frames of the selected program, and a multiplexer multiplexes the frames of the non-selected program, the encoded frames of the selected program, and original frames of the selected program.

The Schumann patent relates to a DVD player where there is no need for the buffering and multiplexing of more than one program. The Naimpally patent likewise deals with only one program so that again there is no need for the buffering and multiplexing of more than one program.

Therefore, no suggestion exists to lead one of ordinary skill in the art to combine the Schumann patent and the Naimpally patent in such a way as to meet the limitations of independent claim 62. Without such a suggestion, it would not have been obvious to combine the Schumann patent and the Naimpally patent to meet the limitations of independent claim 62.

Therefore, independent 62 is not obvious over the Schumann patent in view of the Naimpally patent.

New independent claim 85 is directed to an MPEG on-screen display coder comprising an MPEG encoder that encodes frames with an on-screen display, and a make-up

packet source that adds make-up packets to each encoded

frame as necessary to ensure that each encoded frame has

as many transport packets as original frames.

The Schumann patent does not disclose the use

of make up packets. The Naimpally patent discloses that

stuffing packets are added to a data stream in order to

maintain a required bit-rate. However, there is no

suggestion that the system disclosed in the Schumann

patent requires stuffing to maintain a required bit-rate.

Indeed, there is no suggestion that bit rate is a problem

in the system disclosed in the Schumann patent.

Therefore, no suggestion exists to lead one of

ordinary skill in the art to combine the Schumann patent

and the Naimpally patent in such a way as to meet the

limitations of independent claim 85. Without such a

suggestion, it would not have been obvious to combine the

Schumann patent and the Naimpally patent to meet the

limitations of independent claim 85.

Therefore, independent 85 is not obvious over

the Schumann patent in view of the Naimpally patent.

New independent claim 88 is directed to an MPEG

on-screen display coder comprising a demultiplexer, an

MPEG encoder, and a multiplexer. The demultiplexer

demultiplexes frames of a selected video program from

frames of a non-selected program in a transport stream.

The MPEG encoder receives the frames of the selected program and processes the frames of the selected program so as to encode frames with the on-screen display. The multiplexer multiplexes the encoded frames with the frames of the non-selected video program in the transport stream.

Neither the Schumann patent nor the Naimpally patent discloses demultiplexing frames of a selected video program from frames of a non-selected program, processing the frames of the selected program so as to encode frames with the on-screen display, and multiplexing the encoded frames with the frames of the non-selected video program.

Accordingly, the Schumann patent and the Naimpally patent cannot be combined in a way to meet the limitations of independent claim 87.

Therefore, independent 87 is not obvious over the Schumann patent in view of the Naimpally patent.

Because the independent claims of the present application are patentable over the Schumann patent and/or the Naimpally patent, the dependent claims of the present application are likewise patentable over the Schumann patent and/or the Naimpally patent.
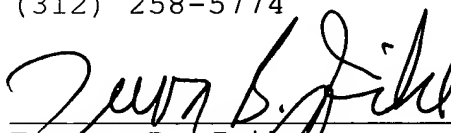
CONCLUSION

In view of the above, it is clear that the claims of the present application are patentable over the references applied by the Examiner. Accordingly, allowance of these claims and issuance of the above captioned patent application are respectfully requested.

Respectfully submitted,

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